

ASSESSMENT OF THE NUTRITIONAL CHARACTERISTICS AND GASTRONOMIC PATTERNS OF CULINARY DISHES FROM SOME MEDITERRANEAN COUNTRIES

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Abstract

This study investigates the eating habits of consumers from main regions of some Mediterranean countries, focusing on nutritional patterns and food preferences. Gastronomy in Mediterranean countries has been shaped by a variety of cultural influences, largely due to historical interactions among neighboring states, which led to a blending of local traditions, cultural practices and lifestyles. The study presents traditional culinary dishes from the most representative regions of Italy, Spain, Greece and France. The nutritional values of the most consumed dishes in each country have been calculated. The gastronomic preparations were structured as starters, liquid dishes, main dishes, dessert and drinks and the energy and nutritional values were calculated for one dish from each category, considered as the most relevant for each country studied. Our results reveal that in all food preparations of the four countries studied, the predominant ingredients are meat, fish, seafood, and vegetables. The calculated nutritional profile of the menus specific to Spain, France, Italy, and Greece is well-balanced and has moderate calories values.

Key words: energy value, gastronomic patterns, Mediterranean countries, nutritional profile, traditional dishes.

INTRODUCTION

The study of culinary practices is an endeavour of scientists all over the world, and especially in the Mediterranean region, where cooking plays an essential role in food preparation processes and is an expression of the cultural identity of the countries in this geographical area (Mitrea et al., 2003; Essid, 2012; Trichopoulou, 2014). Mediterranean culinary traditions are determined by many intersecting and interacting cultural, historical and social factors resulting in the fusion of local traditions, cultural practices and lifestyles. These interactions have significantly shaped the availability and consumption patterns of both terrestrial and marine products, while also influencing the development of distinct preferences for specific tastes and flavor profiles. Religious and cultural influences were

profoundly integrated into culinary traditions, recipes, and cookbooks, especially prior to the 18th century. Despite notable regional variations, Mediterranean countries demonstrate remarkable parallels in their lifestyles, particularly in relation to dietary practices and flavor preferences (Turmo, 2012; Pérez-Lloréns et al., 2021). The “traditional” Mediterranean diet is distinguished by a predominance of minimally processed, plant-based foods, such as whole grains, vegetables, fruits, legumes, nuts, seeds, and extra virgin olive oil, complemented by moderate consumption of fish, shellfish, and wine. It is further characterized by a relatively limited intake of meat, dairy products, eggs, animal fats, and occasional foods (Radd-Vagenas et al., 2017). Other additional factors associated with Mediterranean culinary practices and dietary habits are preference for home-cooked

meals, the use of moist-heat cooking at lower temperatures, the social tradition of shared meals, limited snacking, fasting practices, home vegetable gardening, and the use of traditional and diverse food varieties. These elements are particularly evident in the cuisines of Italy, Greece, Spain and France (Dernini, 2015; Radd-Vagenas et al., 2017). Italian culinary traditions are characterized by a wide array of fish and seafood dishes, underscoring the cultural importance and gastronomic adaptability of marine-based food products within the country (Dinçer, 2018). The Italian cuisine sector includes a strong seafood processing industry, primarily focused on tuna canning and preservation. Additionally, there is a significant presence of enterprises processing anchovies, sardines, and shellfish. Fish and seafood are highly valued by Italian consumers as healthy food options and are essential elements of the Mediterranean diet (Grosso et al., 2017; EUMOFA, 2021). The Mediterranean diet, widely practiced in Greece, has gained global recognition for its health benefits. It emphasizes high consumption of unrefined grains, vegetables, fruits, legumes, and olive oil; moderate intake of dairy, fish, and wine; and limited consumption of red meat, processed meats, refined sugars, and ultra-processed foods (Pogurschi et al., 2019; Marin et al., 2015; Papadaki et al., 2020; Adamidis et al., 2021). Spain has recently been recognized as the healthiest country globally, largely attributed to the widespread adoption of the Mediterranean diet and the effectiveness of its healthcare system (Miller, and Lu, 2019). In this context, the Spanish adoption of the Mediterranean diet is marked by high consumption of vegetables, nuts, fruits, fish, whole grains, and olive oil, foods consistently linked to a reduced incidence of cardiovascular disease and other chronic conditions (Rodríguez-Martín et al., 2019). Renowned for its gastronomic heritage, France's food model is fundamentally rooted in the principles of pleasure, taste, conviviality, culinary commitment and product quality, with a particular emphasis on origin and production methods (Gaspar et al., 2020). French culinary traditions place a strong emphasis on the meticulous selection of ingredients and the mastery of cooking techniques. Renowned for

its precision and intricacy, French cuisine employs a variety of methods, including sautéing, frying, roasting, stewing, boiling, and braising, each demanding specialized skills and meticulous attention to detail (Yan, 2024). The aim of this study was to identify the most common eating habits among consumers in key regions of several Mediterranean countries, focusing on nutritional patterns and food preferences.

MATERIALS AND METHODS

A bibliometric analysis was performed using 27 review articles published between 2012 and 2024, centered on the theme of Mediterranean diets. The articles were identified through searches conducted on the Web of Science, Scopus, and Google Scholar. Consistent search terms were applied across all databases to ensure thorough coverage. The research focused on analyzing dishes categorized as starters, main courses, beverages, and desserts, which are emblematic of the most culturally significant regions, including Tuscany, Puglia, and Sicily in Italy; Athens, Thessaloniki, and Kavala in Greece; Catalonia, Andalusia, Galicia, Aragon, and Castile in Spain; and Provence, Alsace, and Brittany in France. A representative menu, tailored to each distinct region across the four countries, was selected for nutritional analysis. Nutrient values were calculated using the USDA National Nutrient Database. The findings were presented in both tabular and graphical formats <https://fdc.nal.usda.gov/>.

RESULTS AND DISCUSSIONS

Gastronomic patterns of culinary dishes from certain geographical areas of Italy, Greece, Spain and France

Representative preparations from Italian regions are shown in Tables 1-3, those from Greek regions in Tables 4-6, those from Spain in Tables 7-9, and those from France in Tables 10-12.

As we can see in Table 1-3, at the Italian appetizer preparation are usually used fresh local vegetables and fish, which are also mainly found in liquid preparations. Italian cuisine in the studied regions varies significantly in

ingredients and techniques, with an emphasis on fish, seafood, slow-cooked beef, and al

dente pasta and vegetables prepared by sautéing, baking, frying, or grilling.

Table 1. Representative culinary dishes from Italy in Toscana area (Corinto, 2017)

Starters		Liquid dishes		Main courses dishes		Dessert		Drinks	
Name	Description	Name	Description	Name	Description	Name	Description	Name	Description
Insalata di Cavolo Nero	A Tuscan salad of cavolo nero (kale) dressed with olive oil, lemon, and sometimes Parmesa	Cacciucco	A Tuscan fish, squid and shellfish soup served with spicy tomato-garlic broth	Pappardelle al Cinghiale	Wide, flat pasta served with a slow-cooked wild boar ragu, which is rich and flavorful with herbs, red wine, and vegetables	Tiramisu	Tiramisu, from Veneto, is popular across Italy, including Tuscany. It lays coffee-soaked ladyfingers, mascarpone, and cocoa powder	Negroni	A popular Italian cocktail with gin, Campari, and sweet vermouth
Bruschetta al Pomodoro	Toasted bread topped with tomatoes, basil, garlic, and olive oil, served on ciabatta or baguette	Ribollita	A hearty Tuscan soup of kale, beans, vegetables, and stale bread, is classic comfort food	Peposo alla Fiorentina	A slow-cooked beef stew with red wine, garlic and black pepper, served with crusty bread	Cantucci con Vin Santo	Almond biscuits served with Vin Santo for dipping	Vin Brulé	Spiced wine, a favorite winter, is red wine heated with cinnamon, cloves, and orange peel

Table 2. Representative culinary dishes from Italy in Puglia area (Renna et al., 2015)

Starters		Liquid dishes		Main courses dishes		Dessert		Drinks	
Name	Description	Name	Description	Name	Description	Name	Description	Name	Description
Burrata	A fresh cheese made from mozzarella and cream, typically served with fresh tomatoes, basil, and drizzled with olive oil	Zuppa di Cozze	A light, flavorful soup made with fresh mussels, tomatoes, garlic, white wine, and herbs	Polpo alla Pugliese	Slow-cooked octopus with tomatoes, garlic, olive oil, and herbs, typically served with roasted potatoes or polenta	Pasticciotti	Small, traditional pastry filled with custard or sometimes chocolate. It's a beloved dessert in Puglia, often served during holidays	Caffè Leccese	A coffee drink unique to the Puglia region, made with espresso, almond milk, and ice. It's sweet and refreshing
Orecchiette con Cime di Rapa	This traditional dish from Puglia features orecchiette pasta (shaped like little ears) served with cime di rapa (broccoli rabe), garlic, anchovies, and olive oil	Acquasale	A bread soup made with stale bread, tomatoes, onions, cucumbers, and olives, dressed with olive oil and vinegar. It's a very simple and refreshing dish	Orecchiette con Ragu di Carne	Orecchiette pasta is served with slow-cooked beef or lamb ragu, typically rich in tomato sauce, garlic, and herbs	Sospiri	Light, fluffy pastries made from egg whites and sugar, often flavored with lemon or vanilla	Limoncello	A popular Italian lemon liqueur that's often served chilled after meals as a digestif

Table 3. Representative culinary dishes from Italy in Sicily area (Mangano, 2020)

Starters		Liquid dishes		Main courses dishes		Dessert		Drinks		
Name	Description	Name	Description	Name	Description	Name	Description	Name	Description	
Insalata di Mare	Fresh fish and shellfish salad with lemon, olive oil, and capers	Minestrone alla Siciliana	A seasonal vegetable soup with beans, tomatoes, potatoes, zucchini, and optional pasta	Pasta alla Norma	A traditional Sicilian dish characterized by sautéed eggplant, tomato sauce, grated salted ricotta, and fresh basil	Cannoli	Crisp fried pastry tubes filled with sweetened ricotta, typically enriched with chocolate chips, candied fruit, or pistachios	Marsala Wine	A Sicilian fortified wine, primarily used in cooking but also consumed as an aperitif	
Swordfish Carpaccio	An elegant appetizer of raw, thinly sliced swordfish arranged in concentric circles and finished with olive oil and parsley to complement its natural flavor	Caponata di Pesce	A variation of the classic caponata, this version includes fish such as tuna or swordfish in addition to eggplant and vegetables	Involtini di Pesce Spada	Reinterprets classic caponata through the incorporation of swordfish or tuna alongside its foundational eggplant and vegetables	Thinly sliced swordfish rolls stuffed with a breadcrumb mixture of pine nuts, raisins, and herbs, traditionally grilled or baked	Cassata Siciliana	A classic Sicilian pastry that combines ricotta cheese with candied fruits and marzipan, distinguished by its colorful presentation and celebratory association	Amaro Averna	A Sicilian herbal liqueur, characterized by its bitter flavor profile and typically consumed as a digestif

The dessert offerings exhibit considerable diversity, incorporating characteristic ingredients including ricotta and mascarpone cheeses, almonds, pistachios, candied fruits, and chocolate. The beverage selection is similarly varied, including wine as well as sweet and bitter liqueurs served either as

aperitifs or digestifs (Renna et al., 2015; Corinto, 2017; Mangano, 2020).

Tables 4-6 reveal the complexity of Greek culinary preparations in the surveyed regions, featuring diverse ingredients including traditional cheeses, lamb, pork, fish and seafood, and varied vegetables.

Table 4. Representative culinary dishes from Greece in Athens area (Moira et al., 2015)

Starters		Liquid dishes		Main courses dishes		Dessert		Drinks	
Name	Description	Name	Description	Name	Description	Name	Description	Name	Description
Tzatziki	A traditional yogurt-based dish with cucumber, garlic, and herbs, served with pita or vegetables	Fasolada	A traditional Greek bean soup (fasolada) featuring tomatoes, onions, olive oil, and herbs, valued for its nutritional richness	Moussaka	A traditional baked dish composed of alternating layers of eggplant, ground lamb or beef, béchamel sauce, and tomato purée	Baklava	A layered filo pastry filled with walnuts or pistachios, soaked in honey syrup	Ouzo	A traditional anise-derived aperitif, typically served with meze in Mediterranean cuisine
Saganaki	A traditional appetizer featuring fried kefalotyri or halloumi cheese, typically finished with lemon juice	Revithada (Chickpea Soup)	A rustic Greek chickpea stew infused with olive oil, lemon, and garlic, noted for its simplicity and depth of flavor	Souvlaki	Skewer-grilled meats (typically pork, chicken, or lamb) served with pita bread, fresh vegetables, and tzatziki sauce	Kataifi	Crisp shredded phyllo filled with nuts and soaked in syrup with dual-textured contrast of crispness and moisture	Retsina	A traditional Greek white wine infused with pine resin, imparting a distinctive aromatic profile

Table 5. Representative culinary dishes from Greece in Thessaloniki area (Boza, 2018)

Starters		Liquid dishes		Main courses dishes		Dessert		Drinks	
Name	Description	Name	Description	Name	Description	Name	Description	Name	Description
Bougatsa	Greek filo pastry with custard or savory fillings - a Thessaloniki breakfast staple	Bouzouki Soup	A traditional chicken soup thickened with egg and lemon, prized in Thessaloniki for its comforting yet tangy profile	Bougiourdi	Baked feta with tomatoes, peppers, and olive oil, traditionally served with bread	Bougatsa	Thessaloniki's iconic bougatsa: custard-filled phyllo pastry with powdered sugar	Masticha Liqueur	A distinctive Greek liqueur derived from mastic tree resin, prized for its herbal notes. A regional specialty throughout Greece
Tzatziki	A classic Greek yogurt-based dip with cucumber, garlic, and olive oil, is a ubiquitous appetizer throughout Greece	Patsas	A traditional tripe soup made from slow-cooked beef or lamb offal, typically seasoned with vinegar and garlic	Giouvetsi	A traditional baked pasta dish with slow-cooked lamb or beef in tomato sauce, topped with cheese. Common in both households and tavernas	Trigli	A traditional sweet pastry composed of layered filo dough and nuts	Ouzo	An anise-flavored spirit traditionally served as an aperitif in Thessaloniki, accompanied by meze

Table 6. Representative culinary dishes from Greece in Kavala area (Pavlidis & Markantonatou, 2020)

Starters		Liquid dishes		Main courses dishes		Dessert		Drinks	
Name	Description	Name	Description	Name	Description	Name	Description	Name	Description
Kavourmas	A traditional pork sausage from Kavala and northern Greece, seasoned with garlic, cumin, and aromatic spices	Bouga	A traditional preparation of feta cheese simmered with tomatoes, olive oil, and aromatic herbs, representing	Kavourmas with Rice	A traditional pork sausage with rice exemplifies the region's agricultural heritage through its rich flavors	Bougatsa	Signature pastry features sweet custard or savory minced meat fillings, commonly consumed as a breakfast item or snack	Greek Coffee	A robust, thick brew traditionally served hot in small cups with a accompanying water glass
Kalamari	Fried squid, typically accompanied by lemon and herbs, is a popular Kavala appetizer reflecting its coastal location	Patsas	A traditional tripe soup made from slow-cooked beef or lamb offal, typically seasoned with vinegar and garlic	Fried Fish	Kavala is renowned for its fresh seafood, particularly grilled or fried sardines and mackerel, typically dressed with lemon and olive oil	Halvas	Traditional Kavala dessert of semolina cooked with syrup, butter, and nuts, reflecting Mediterranean culinary heritage	Mastiha	A resin-based liqueur derived from Pistacia lentiscus, traditionally consumed as a digestif

The preparation methods most used include baking in the oven, grilling, broiling and deep frying. Traditional desserts feature intense sweetness with syrup-based preparations, while characteristic beverages incorporate anise flavoring (Moira et al., 2015; Boza, 2018; Pavlidis and Markantonatou, 2020).

Tables 7-9 illustrate that traditional Aragonese dishes predominantly feature roasted lamb, while Catalonia and Andalusia showcase a prevalence of deep-fried fish preparations flavored with garlic. Additionally, Aragonese and Catalan soups are typically served hot, whereas Andalusian soups are traditionally

cold, likely reflecting the region's warmer climate. Desserts vary regionally, though all share pronounced sweetness and dense consistency. Wine is the predominant beverage

accompanying meals across all three surveyed Spanish regions, distinguished by its distinctive flavor profiles and strength (Johannes, 2019; Dancausa, 2021; Jerez, 2023).

Table 7. Representative culinary dishes from Spain in Catalunya area (Johannes, 2019)

Starters		Liquid dishes		Main courses dishes		Dessert		Drinks	
Name	Description	Name	Description	Name	Description	Name	Description	Name	Description
Escudella i Carn d'Olla	Catalonia's traditional winter stew, served in two courses, begins with a vegetable, rice, or pasta soup, followed by meats (typically beef, pork, and sausages) simmered in the same broth and accompanied by beans or potatoes	Sopa de Peix	A traditional Catalan fish stew from the Mediterranean coast, characterized by its blend of fish, shellfish, garlic, saffron, and romesco sauce, showcasing the region's seafood-centric cuisine	Fideuà	A traditional Catalan pasta dish featuring seafood, saffron, garlic, and romesco sauce, prepared in a shallow pan and typically accompanied by alioli	Crema Catalana	A traditional Catalan dessert featuring citrus and cinnamon infused custard with a caramelized sugar crust, offering contrasting creamy and crisp textures	Cava	A classic Catalan custard infused with citrus zest and cinnamon, distinguished by its caramelized sugar crust that contrasts creamy and crisp textures

Table 8. Representative culinary dishes from Spain in Aragon area (Jerez, 2023)

Starters		Liquid dishes		Main courses dishes		Dessert		Drinks	
Name	Description	Name	Description	Name	Description	Name	Description	Name	Description
Ternasco de Aragón	A traditional Aragonese preparation of young lamb, typically roasted or grilled with garlic, rosemary, and olive oil, and served sliced with potatoes or seasonal vegetables	Sopa de Ajo	A traditional Aragonese garlic soup featuring a base of garlic, paprika, and bread, often enriched with egg. This hearty dish is particularly valued for its warming properties during winter months	Chiretas	A traditional Aragonese dish consisting of lamb intestines stuffed with seasoned rice, meat, and herbs, simmered in broth	Frutas de Aragón	A traditional dessert confection of candied fruits, typically melon, preserved through sugar syrup saturation and crystallization	Bobal Wine	Aragon produces robust red wines characterized by deep, complex flavors that complement the region's hearty meat-based cuisine

Table 9. Representative culinary dishes from Spain in Andalusia area (Dancausa, 2021)

Starters		Liquid dishes		Main courses dishes		Dessert		Drinks	
Name	Description	Name	Description	Name	Description	Name	Description	Name	Description
Tortilla de Camarones	Featuring a delicate seafood essence, the dish is subtly seasoned with salt, garlic, and parsley to accentuate the shrimp's natural flavor profile	Gazpacho	A traditional Andalusian cold soup, combines tomatoes, cucumbers, peppers, onions, garlic, and bread, emulsified with olive oil and vinegar, making it ideal for summer consumption	Pescado Frito	Andalusia's iconic dish featuring lightly battered and fried mixed seafood (anchovies, squid, sardines), typically served with lemon. A staple of coastal cuisine	Tarta de Santiago	A traditional Spanish almond cake from Andalusia and Galicia, made with ground almonds, sugar, eggs, and occasionally lemon zest	Jerez	Jerez de la Frontera, Andalusia, is the origin of sherry, a fortified wine produced in diverse styles ranging from dry Fino to sweet Pedro Ximénez

As evidenced by the data in Tables 10-12, the French dishes examined in the study areas exhibit considerable diversity and sophistication in their culinary composition.

These dishes incorporate a variety of ingredients, including meat, fish, and seafood, as well as seasonal vegetables, often enhanced with cheese-based seasonings.

Table 10. Representative culinary dishes from France in Provence area (John, 2024)

Starters		Liquid dishes		Main courses dishes		Dessert		Drinks	
Name	Description	Name	Description	Name	Description	Name	Description	Name	Description
Salade Niçoise	A Mediterranean starter salad featuring olive oil, vinegar, basil, and thyme, offering fresh and light qualities.	Soupe au Pistou	The soup is accompanied by pistou, an aromatic sauce comprising basil, garlic, olive oil, and Parmesan - a pine nut-free variant of pesto.	Loup de Mer en Papillote	Seasonal vegetables (fennel, tomatoes, zucchini) are roasted with the fish, enhancing flavor through shared cooking.	Crème Brûlée	Crème brûlée: a classic French dessert consisting of a velvety custard base topped with a torched sugar crust.	Cassis Liqueur	Crème de Cassis, a sweet blackcurrant liqueur originating from Cassis in Provence, is traditionally blended with white wine to create Kir.
Ratatouille	A traditional Provençal vegetable stew featuring eggplant, zucchini, bell peppers, tomatoes, onions, and garlic, slow cooked in olive oil with aromatic herbs.	Bouillabaisse	Marseille's iconic Provençal fish soup, characterized by its blend of fresh seafood, aromatic herbs, tomatoes, and traditional accompaniments of rouille and crusty bread.	Daube Provençale	a traditional slow-braised beef stew from Provence, typically accompanied by polenta or gnocchi to complement its rich sauce.	Clafoutis aux Cerises	A traditional Limousin dessert consisting of fresh cherries baked in a thick, custard-like batter, widely enjoyed throughout Provence.	Provençal Wine	Beyond its signature rosés, Provençal viticulture encompasses red and white wine production from autochthonous grape cultivars.

Table 11. Representative culinary dishes from France in Alsace area (Ueda & Poulaïn, 2021)

Starters		Liquid dishes		Main courses dishes		Dessert		Drinks	
Name	Description	Name	Description	Name	Description	Name	Description	Name	Description
Tarte Flambee	A crisp flatbread with crème fraîche, onions, and lardons, sometimes topped with cheese or mushrooms	Soupe à l'Oignon	The Alsatian version of French onion soup features slow-cooked onions, beef broth, white wine, toasted bread, and melted cheese	Munster Cheese and Charcuterie	Munster cheese is often served with cured meats like pâtés, hams, and sausages, commonly found in Alsatian meals	Pain d'épices	Alsace is known for pain d'épices, a spiced bread with honey, cinnamon, and cloves, often enjoyed with tea or coffee	Crémant d'Alsace	Crémant d'Alsace is a fresh, crisp sparkling wine made like Champagne from Pinot Blanc, Pinot Noir, and Riesling
Foie gras	A premium French delicacy of fattened duck or goose liver, prized for its rich texture and traditionally served with fruit compotes, wine-based sauces, or artisanal bread	Soupe de Poisson	A traditional Alsatian fish soup incorporating local seafood, vegetables, and rouille, served with grilled bread	Sauerbraten	A marinated roast (beef, lamb, or pork) slow-cooked in spiced vinegar-wine broth, traditionally served with potatoes or dumplings	Crêpes	While iconic to Brittany, are equally prevalent in Alsace, typically served with sweet accompaniments such as sugar, fruit preserves, Nutella, or fresh fruit	Alsace Wine	There are aromatic white wines, characterized by floral notes and crisp acidity, predominantly cultivated along the Alsace Wine Route

Table 12. Representative culinary dishes from France in Bretagne area (Gatley & Lang 2014)

Starters		Liquid dishes		Main courses dishes		Dessert		Drinks	
Name	Description	Name	Description	Name	Description	Name	Description	Name	Description
Salade de Fruits de Mer	A refreshing seafood salad featuring shellfish and fish, dressed with lemon, olive oil, aromatic herbs, and a hint of vinegar	Bisque de Homard	A classic Mediterranean lobster soup prepared with shells, cream, and brandy, yielding a velvety, aromatic broth	Galette-Saucisse	A rustic buckwheat crêpe enveloping a grilled sausage, ideal for casual dining or Mediterranean-style picnics	Crêpes Sucrées	Sweet crêpes, often filled with Nutella, sugar, lemon, or caramel, reflect Mediterranean influences, particularly when incorporating citrus zest or toasted nuts	Chouchen	A traditional Breton mead produced through the fermentation of honey, water, and yeast, typically consumed as an aperitif or dessert accompaniment
Huîtres de Cancale	Brittany, particularly Cancale, is renowned for its oysters, typically served raw with citrus or vinegar as a premium appetizer	Soupe de Poisson	A traditional fish soup featuring local seafood and root vegetables (leeks, carrots, onions), served with rouille and crusty bread	Moules Marinières	Moules marinières: a classic Mediterranean dish of mussels steamed in white wine with garlic, shallots, and butter, yielding an aromatic broth	Tarte Bretonne	A classic Mediterranean tart featuring a buttery short crust pastry filled with rich custard, infused with vanilla and eggs for a velvety texture	Kirr Breton	A regional variation of the classic Kir, combining Cidre Breton with Crème de Cassis for a refreshing balance of apple tartness and blackcurrant sweetness, typically served as an apéritif

The desserts are also very varied and exquisite, the French pastry being recognized and appreciated all over the world.

Wines constitute a fundamental component of French gastronomy, renowned globally for their exceptional quality.

Among the emblematic elements of France's culinary cultural identity is the Kir, a traditional beverage that further exemplifies the nation's oenological heritage.

Nutritional characteristics of some selected culinary dishes belonging to some areas of Italy, Greece, Spain and France. Figures 1-4 present the nutritional profiles of selected representative dishes from the culinary traditions of Spain, France, Italy, and Greece.

Results show the Spanish menu is high in carbohydrates and fats, then proteins. Saturated fats are minimal, with predominance of unsaturated omega-3, -6, and -9 from fish, seafood, and olive oil.

The Italian menu provides fats and carbohydrates as its main nutrients. Notably, Italian dishes are particularly rich in unsaturated fatty acids (omega-3, -6, and -9).

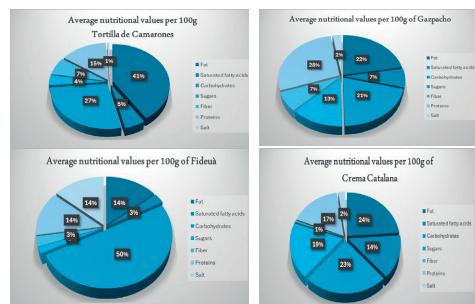


Figure 1. Nutritional profiles of selected dishes from Spain

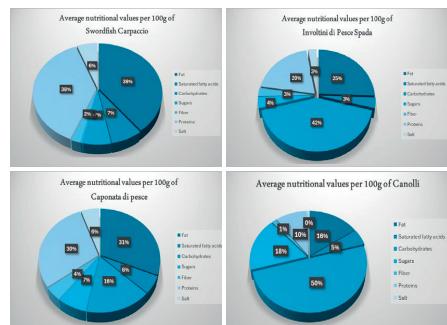


Figure 2. Nutritional profiles of selected dishes from Italy

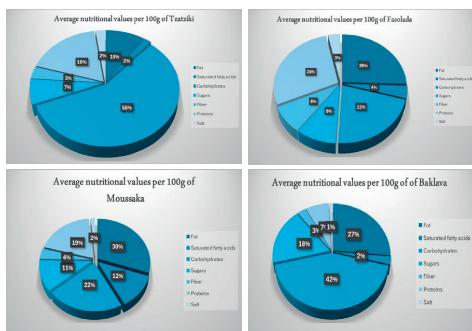


Figure 3. Nutritional profiles of selected dishes from Greece

Calculated nutritional values reveal carbohydrates as the primary macronutrient in Greek cuisine, followed by fats and proteins (Figure 3). The dietary pattern shows elevated sugar levels, largely attributable to traditional sweet pastries such as baklava.

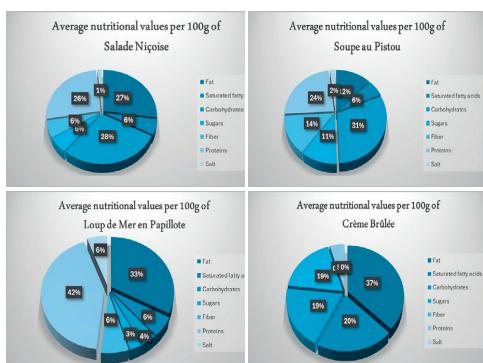


Figure 4. Nutritional profiles of selected dishes from France

The most balanced culinary dishes are those from French menu (Figure 4). It is prepared from similar ingredients used in those other 3 countries. French dishes are low in saturated fats and rich in proteins.

Figure 5 demonstrates that the Spanish dish menu exhibited the highest caloric content, with a ratio of 2.22 compared to the Greek menu, 1.7 compared to the Italian menu, and 1.54 compared to the French menu. The energy value of Italian and France menu were similar.

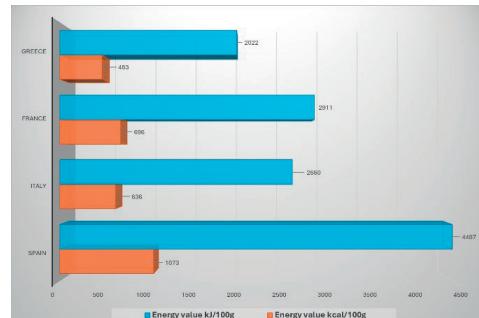


Figure 5. The calculated energy values of selected dishes from Spain, France, Italy, and Greece

CONCLUSIONS

The selected culinary dishes from the four Mediterranean regional cuisines are characterized by their complex composition and rich ingredient profile, encompassing meat, fish, seafood, and vegetables.

The selected Mediterranean culinary dishes included in this study exhibit a high concentration of omega-3, omega-6, and omega-9 fatty acids.

The food preparations included in this study were consistently characterized by significant fiber and protein content.

The studied menus from Spain, France, Italy, and Greece exhibit moderate caloric density and a balanced nutritional profile.

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